

PATENT



Customer No.: 31561
Application No.: 10/063,737
Docket No.: 8727-US-PA

RCE/2825
JPW \$

Request For Continued Examination (RCE) Transmittal Address To: Commissioner for Patents 220 20th Street South Customer Window, Mail Stop <u>RCE</u> Crystal Plaza Two, Lobby, Room 1B03 Arlington, Virginia 22202 Fax No.: 703-872-9319	Applicaton No.	: 10/063,737
	Filing Date	: May 09, 2002
	First Named Inventor	: Hsu
	Group Art Unit	: 2825
	Examiner	: Bowers, Brandon
	Attorney Docket No.	: 8727-US-PA

This is a **Request for Continued Examination (RCE)** under 37 C.F.R. 1.114 of the above-identified application.

1. Submission required under 37 CFR § 1.114.

a. ☐ Previously submitted

() Consider the amendment(s)/reply under 37 CFR 1.116 previously filed on _____.

() Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____.

b. ☒ Enclosed

(x) Preliminary Amendment in (9) page(s).

(x) Other Documents in (1) page(s): A replacement sheet of FIG. 5

2. Miscellaneous

a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ month(s).

b. ☐ Associate Power of Attorney.

3. Fees are calculated as follows:

NUMBER FILED		CLAIMS FILED PRESENT HIGHEST NO. EXTRA PREVIOUSLY PAID FOR			RATE	ADDITIONAL FEE
Basic Fee					\$ 770	\$ 770
Total Claims	7	MINUS	26	= 0	× 18	=\$ 0
Independent Claims	1	MINUS	4	= 0	× 86	=\$ 0
<input type="checkbox"/> month(s) extension of time is hereby requested.					Time Extension Fee	=\$ 0
					Total:	\$ 770

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a. ☒ Please charge the fee in the amount of \$770 as calculated above to account No. 50-2620 (Order No.: 8727-US-PA).

If the payment is not fully covered in response thereof, the Commissioner is authorized to charge any fees required in connection with the filing of this paper to account No.: 50-2620 (Order No.: 8727-US-PA).

Date :

Sept. 9, 2004

Belinda Lee

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Registration No.: 46,863

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Customer No.: 31561
Application No.: 10/063,737
Docket No.: 8727-US-PA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

BRANDON **Hsu**

Serial No. : 10/063,737

Filed : 05/09/2002

For : VOLTAGE REFERENCE CIRCUIT)
LAYOUT INSIDE MULTI-)
LAYERED SUBSTRATE)

Examiner : BOWERS,

Art Unit : 2825

Docket No. : 8727-US-PA

No fee is believed to be due. However, the Commissioner is authorized to charge any fees required in connection with the filing of this paper to account No. 50-2620 (Order No. 8727-US-PA).

AMENDMENTS AND REQUEST FOR CONTINUED EXAMINATION (RCE)
UNDER 37 CFR § 1.114

**Customer No.: 31561
Application No.: 10/063,737
Docket No.: 8727-US-PA**

The Office Action mailed June 10, 2004 has been carefully considered. Pursuant to 37 CFR § 1.114, Applicants respectfully request continued examination of the above-identified application in consideration of the following Amendments and remarks.

In The Claims:

Claims 1-15 (Cancelled)

Claim 16. (Currently Amended) A multi-layered substrate having a voltage reference signal circuit layout therein, comprising:

at least one signal layer having a plurality of signal traces;

a non-signaling layer having a voltage reference signal trace, wherein the voltage reference signal trace is wider than the other signal traces; and

a conductive plane between the signal layer and the non-signaling layer.

Claim 17. (Original) The multi-layered substrate of claim 16, wherein the non-signaling layer includes at least one power plane.

Claim 18. (Original) The multi-layered substrate of claim 16, wherein the non-signaling layer includes at least one ground layer plane.

Claim 19. (Original) The multi-layered substrate of claim 16, wherein the non-signaling layer includes at least one power plane and a plurality of signal traces.

Claim 20. (Original) The multi-layered substrate of claim 16, wherein the non-signaling layer includes at least one ground layer plane and a plurality of signal traces.

Claim 21. (Original) The multi-layered substrate of claim 16, wherein the conductive plane includes a ground plane.

Claim 22. (Original) The multi-layered substrate of claim 16, wherein the conductive plane includes a power plane.

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Claims 23-26 (Cancelled)

Customer No.: 31561
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In The Drawings

The Applicants have amended FIG.5 for including technique features cited in the amended claim 16. The technique feature is described in paragraph 0034 in the specification of the present application, and therefore no new matter is added.

REMARKS

Present Status of the Application

The Office Action rejected all presently-pending claims 16-22. Specifically, the Office Action rejected claims 16-22 under 35 U.S.C. 102(b), as being anticipated by Sharma et al. (US 5,990,547 and Honsinger et al. (US 5,500,804), respectively. Applicant respectfully requests reconsideration of those claims.

Discussion of Office Action Rejections

The Office Action rejected claims 16-22 under 35 U.S.C. 102(b) as being anticipated by Sharma. Applicants respectfully traverse the rejections for at least the reasons set forth below.

To anticipate a claim, the reference must teach each and every element of the claim. M.P.E.P. § 2131. However, Sharma did not disclose the feature of “a non-signaling layer having a voltage reference signal trace, wherein the voltage reference signal trace is wider than the other signal traces” as claimed in claim 16. The emphasized feature can be found in paragraph 0034 in the specification of the present application. According to column 3 line 53 – column 4 line 19, on which the Office Action relied to reject the present application, some traces are moved to the voltage reference layer. However, Sharma focused on increasing I/O by moving traces into voltage reference layers only, and did not

notice anything about the size of the traces. Therefore, those skilled in the art are not taught to enlarge the size of the voltage reference signal trace according to Sharma.

For at least the reasons stated above, it is obvious that Sharma did not teach each and every element of claim 16. Therefore, claim 16 is patentable over Sharma.

Claims 17-22 are therefore patentable over Sharma as a matter of law since their depending claim 16 is patentable over Sharma.

The Office Action further rejected claims 16-22 under 35 U.S.C. 102(b) as being anticipated by Honsinger. Applicants respectfully traverse the rejections for at least the reasons set forth below.

To anticipate a claim, the reference must teach each and every element of the claim. M.P.E.P. § 2131. However, Honsinger did not disclose the feature of “a non-signaling layer having a voltage reference signal trace, wherein the voltage reference signal trace is wider than the other signal traces” as claimed in claim 16. According to column 4, lines 12-15, on which the Office Action relied to reject the present application, wiring media layers are typically arranged as wiring layer pairs with a voltage reference layer. However, the voltage reference layer “provides power and serves to shield signals in one plane pair from interference from signals in another plane pair” (column 4, lines 20-23). It is obvious that, Honsinger taught to *prevent interference between two plane pairs* but did nothing about the size between the voltage reference signal trace and other signal traces.. Therefore, those

skilled in the art are not taught to design voltage reference signal trace into the voltage reference layer according to Honsinger.

For at least the reasons stated above, it is obvious that Honsinger did not teach each and every element of claim 16. Therefore, claim 16 is patentable over Honsinger.

Claims 17-22 are therefore patentable over Honsinger as a matter of law since their depending claim 16 is patentable over Honsinger.

Further, Sharma and Honsinger did not teach to enlarge the size of the voltage reference signal trace. However, the present invention gains the benefit that reduces power loss and reduces parasitic resistance by employ a wider conductive line as a voltage reference signal trace as claimed in the amended claim 16. Therefore, claims 16-22 are not anticipated by the citations.

For at least the foregoing reasons, Applicant respectfully submits that independent claim 16 patently defines over the prior art references, and should be allowed. For at least the same reasons, dependent claims 17-22 patently define over the prior art as well.

Customer No.: 31561
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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 16-22 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Date :

Sept. 8, 2004

Respectfully submitted,

Belinda Lee
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TRANSACTION REPORT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Applicant : Hsu

Application No. : 10/063,737

Filed : 2002/05/09

For : VOLTAGE REFERENCE CIRCUIT LAYOUT INSIDE
MULTI-LAYERED SUBSTRATE

Art Unit : 2825

Examiner : Bowers, Brandon

TRANSMITTAL LETTER

002-1-703-872-9306

(Via fax: 14 pages, followed by confirmation copy via courier)

ASSISTANT COMMISSIONER FOR PATENTS
 Arlington, VA22202

Dear Sirs,

In response to the Office Action dated June 10, 2004, please find the relevant paper in response to paper No. 20040606. Following the fax transmission, a hard copy via courier will also be forwarded to the Office.



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Docket No. 8727-US-PA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Applicant : Hsu
Application No. : 10/063,737
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MULTI-LAYERED SUBSTRATE
Art Unit : 2825
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002-1-703-872-9306

(Via fax: 14 pages, followed by confirmation copy via courier)

ASSISTANT COMMISSIONER FOR PATENTS
Arlington, VA22202

Dear Sirs,

In response to the Office Action dated June 10, 2004, please find the relevant paper in response to paper No. 20040606. Following the fax transmission, a hard copy via courier will also be forwarded to the Office.

Enclosed please find:

- ☒ Request for Continued Examination in (2) pages
- ☒ Preliminary Amendment in (9) pages
- ☒ Replacement Sheet of Drawing in (1) page
- ☒ Fax confirmation report
- ☒ Prepaid return postcard

Thank you for your assistance in the subject matter. If you have any questions, please feel free to contact me.

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Respectfully Submitted,
JIANQ CHYUN Intellectual Property Office

Date: Sept. 9, 2004

By: Belinda Lee
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